

Panasonic®

Personal Computer

OPERATING INSTRUCTIONS

CF-M31M

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
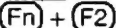
Customer's Record

Model No. _____	Dealer's Name _____
Serial No. _____	_____
or	
Code No. _____	Dealer's Address _____
Date of Purchase _____	_____

Introduction

Thank you for purchasing the Panasonic CF-M31M computer. Please read the Operating Instructions thoroughly for proper operation of your new computer.

Illustrations in this Manual

- NOTE** : **NOTE** provides a useful fact or helpful information.
- CAUTION** : **CAUTION** indicates a condition that may result in minor or moderate injury.
- WARNING** : **WARNING** indicates a hazard that may result in moderate or serious injury, or even death.
- [Start]-[Shut Down] : This illustration means to click [Start], then to click [Shut Down] (For some applications, you may need to double-click.)
-  : This illustration means to press the [Enter] key.
-  : This illustration means to press [Fn], and while holding down on [Fn], to press [F2].

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PS/2™ is a trademark of International Business Machines Corporation.

Pentium® is a registered trademark, and MMX™ is a trademark of Intel Corporation.

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Federal Communications Commission Radio Frequency Interference Statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the Panasonic Service Center or an experienced radio/TV technician for help.

Warning

To assure continued compliance, use only shielded interface cables when connecting to a computer or peripheral. Also, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Responsible Party: Matsushita Electric Corporation of America
One Panasonic Way
Secaucus, NJ 07094
Tel No: 1-800-LAPTOP-5 (1-800-527-8675)

Lithium Battery!

This computer contains a lithium battery to enable the date, time, and other data to be stored in it.

Should only be exchanged by service personnel.

Warning! Risk of explosion from incorrect installation or misapplication!

Read Me First

Precautions

● Usage

Avoid Extreme Heat and Cold

Do not store or use the computer in locations exposed to heat, direct sunlight, or extreme cold.



Avoid moving the computer between locations with large temperature differences.

Operation: 5 °C to 35 °C (41 °F to 95 °F)

Storage: -20 °C to 60 °C (-4 °F to 140 °F)

Avoid Direct Sunlight on the LCD Panel

The display should not be exposed to direct sunlight or ultraviolet light.



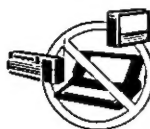
Avoid Humidity, Liquids and Dust

Do not store or use the computer in locations exposed to high humidity, liquids (including rain) or dust.



Prevent Shock

Avoid subjecting the computer to severe vibrations or impact. Do not place the computer inside a car trunk.



Avoid Radio Frequency Interference

Do not place the computer near a television or radio receiver.

● Handling



Avoid Magnetic Fields

Keep the computer away from magnets.



Avoid Stacking

Do not place heavy objects on top of the computer.



Keep Small Objects Away

Do not insert paper clips or other small objects into the computer.



Do Not Disassemble the Computer

Do not attempt to disassemble your computer.



Avoid Excessive Force to the Display

Do not apply excessive downward force on the display.

● **Cables**

Use of an interface cable longer than 3 m (9.84 feet) is not recommended.

Transporting

- It is a good idea to make backup copies on floppy disks and carry them with you. The external FDD (floppy disk drive; CF-VFUDU01) and Port Replicator (CF-VEBM31) are required to use floppy disks.
- Do not carry your computer when it is ON.
- Remove all cables before transporting your computer.
- We recommend preparing a fully charged battery.
When transporting spare batteries inside a package, briefcase, etc., it is recommended that the batteries be stored in a plastic bag.
- Do not carry the computer while the display is open, or carry it by gripping the display.
- Do not put anything (e.g., a piece of paper) between the display and keyboard.
- Do not drop or hit your computer against solid objects.
- If you have occasion to ship your computer, make absolutely sure that it is packed with adequate protection.

When flying

Always carry your computer with you. Never check it with luggage.

Maintenance

● **Display area**

Do not use a dry/wet (with water) cloth to wipe the display. Cleaning the display with a soft cloth applied with isopropyl alcohol or ethyl alcohol is recommended. Do not use other types of chemicals.

● **All other areas**

Do not use solutions such as benzene or thinner. A soft, dry cloth is recommended.

Read Me First

The external FDD (CF-VFDDU01) and Port Replicator (CF-VEBM31) are required to use floppy disks.

Saving Data on the Hard Disk

- **Do not expose your computer to shock.**
Please use care when handling your computer, shock may damage your hard disk or make your software applications and data unusable.
- **Do not power down your computer while software applications are running or HDD indicator is on.**
Properly shut Windows* down to avoid problems ([Start]-[Shut Down]).
- **Save all valuable data to floppy disks.**
Backing up data to floppy disks will limit damage should trouble occur to your computer or should you inadvertently change or erase data.
- **Use the security function for all important data.**
☞ page 34 - Security Measures

* This computer uses Microsoft® Windows® 95 Operating System.

Saving Data on Floppy Disks

- **Do not power down your computer or press the floppy disk drive eject button while the FDD indicator is on.**
Doing so may damage the data on the floppy disk and render the disk useless.
- **Use care when handling floppy disks.**
To protect the data on your floppy disks or to prevent a floppy disk from becoming stuck in your computer, avoid the following:
 - Sliding the shutter on the floppy disk manually.
 - Exposing the disk to a magnetic field.
 - Storing the disk in locations prone to high temperatures, low pitched noise, dampness, or dust.
 - Applying more than one label on the disk.
- **Confirm the contents of a floppy disk before formatting it.**
Confirm that no important data is on the disk, because all data on the disk will be erased.
- **Use the write-protect tab.**
This is a must for preserving important data.
This prevents your data from being erased or overwritten.



Write Enable



Write Disable

Computer Viruses

- **Users are advised to purchase the latest versions of virus protection software and use them regularly.**

We recommend you run the software:

- When booting your computer.
- After receiving data.

We recommend that you check data received on floppy disks or from external sources, such as data downloaded from the Internet, e-mail, etc. (For compressed files, please uncompress them before running a check).

Names of Parts

Top Side

Panel Switch

When the display panel is closed, this button is depressed, causing the screen to automatically shut down or be suspended (⚠ Caution below). When the display panel is opened, the screen is turned on or resumes.

Track Ball

A built-in pointing device that works like a mouse. As you spin the ball with your fingertip, the cursor moves in accordance with the speed and direction of the ball's motion.

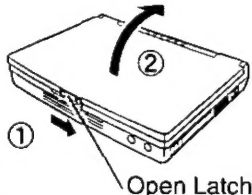
Keyboard

LED Indicators

(⚠ page 73)

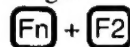
Open Latch

Open the Display



Display

Brightness Adjustment :



Click Buttons

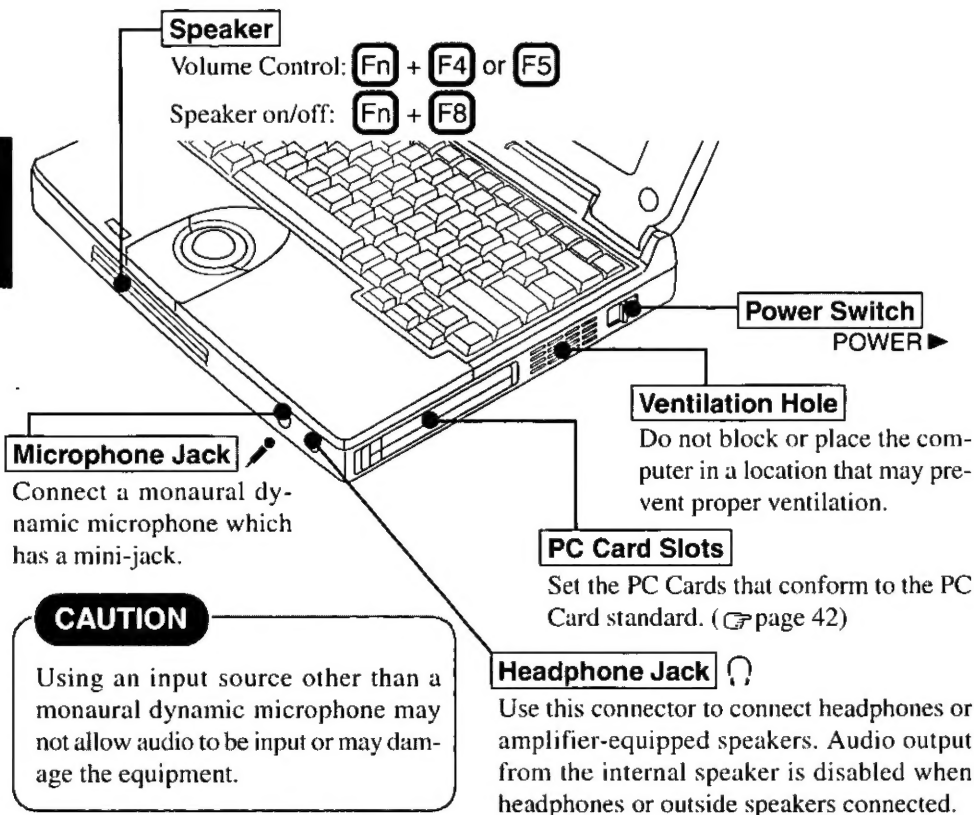
When pressed while the track ball is in use, the buttons select items or perform other operations.

CAUTION

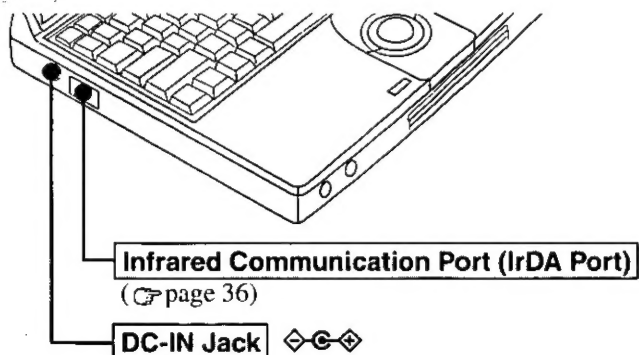
To suspend the screen, [Panel Switch] must be set to [Suspend] (⚠ page 24) in [Power Management]. Do not reopen the display panel until the power indicator turns off. If the display panel is reopened before this happens, it may remain suspended and resuming may not be possible. In such cases, close the display panel again and wait a few seconds before reopening it.

Names of Parts

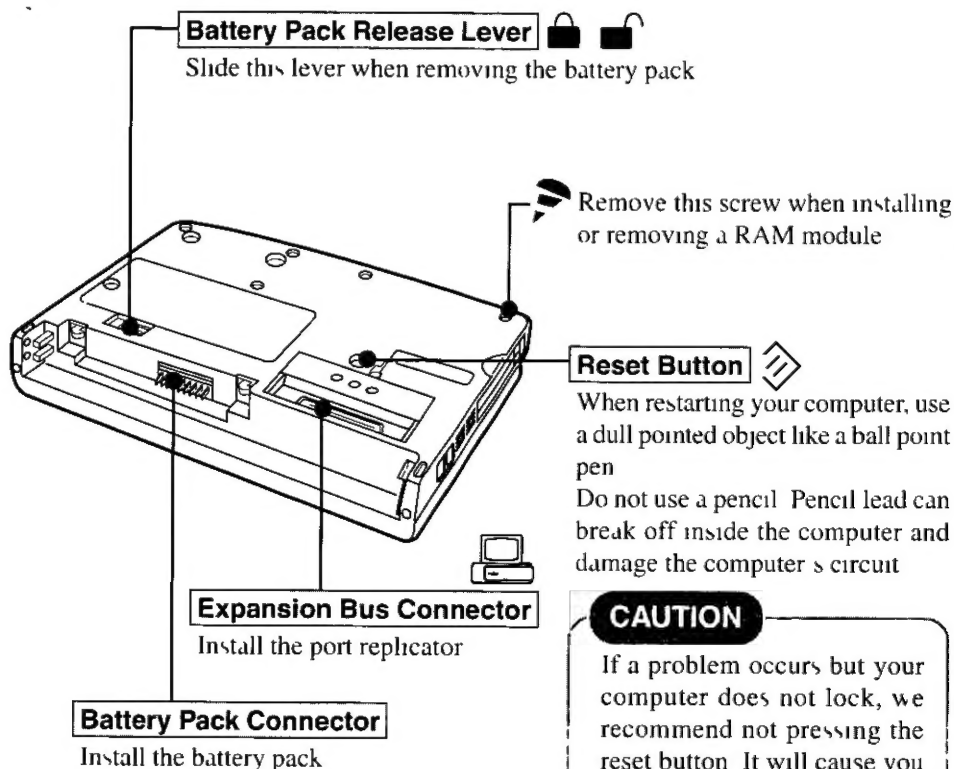
Front / Right Side



Left Side



Rear / Bottom Side



CAUTION


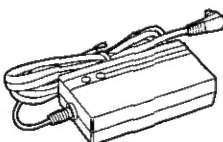
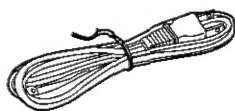
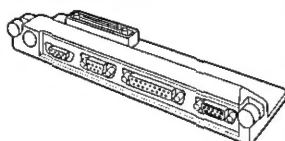
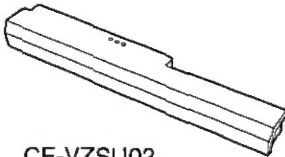
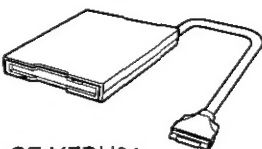

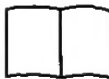



If a problem occurs but your computer does not lock, we recommend not pressing the reset button. It will cause you to lose data if an application is open.

First-time Operation

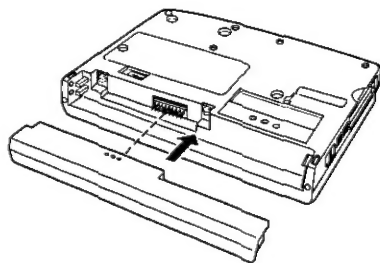
Please read the steps below to help you learn what items are included, and to gain an understanding of some basic computer-related operations.

1 Confirm the inclusion of all parts

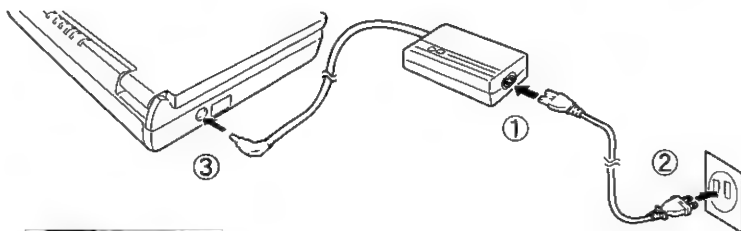
Make sure the parts shown in the figure have been supplied. If any of these items are missing or is not working properly, please contact Panasonic Technical Support.

Computer	AC Adapter 1	AC Cord 1
	 CF-AA1526	
Port Replicator 1	Battery Pack 1	External FDD 1
 CF-VEBM31	 CF-VZSU02	 CF-VFDU01
Operating Instructions .. 1	Windows 95 System Pack..... 1	
	<div> <div>(Microsoft Corporation)</div> <div>    </div> <div> Windows 95 book </div> <div> Windows 95 CD-ROM Internet Explorer CD-ROM </div> <div>  Registration card Floppy disk label </div> </div>	

2 Turn your computer over, install the battery pack (→ page 30)



3 Connect your computer to a power outlet



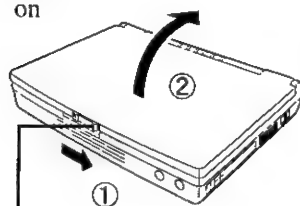
CAUTION

Handling the AC adapter

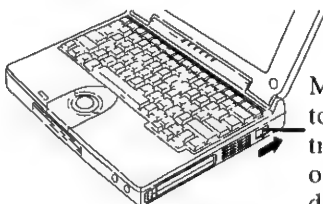
- Do not twist or pull the AC power cord forcefully. Doing so may damage the connections.
- Use only the specified AC adapter with your computer. Using an AC adapter other than the one supplied or car adapter might damage the battery and/or the computer.
- When the DC plug is not connected to the computer, disconnect the AC cord from your AC wall outlet as well.
(If the cord is kept connected, a very low level of power equivalent to approx. 1.2 W will be consumed.)
- Problems such as sudden voltage drops or surges may arise during periods of thunder and lightning. Since this could adversely affect your computer, an uninterruptible power source (UPS) is highly recommended.

4 Read the LIMITED USE LICENSE AGREEMENT (page 66)

To open the display, slide the latch located at the front and lift open the display. Before removing the seal covering the power switch, please read the LIMITED USE LICENSE AGREEMENT. Removal of this seal indicates agreement to the terms specified. After you have agreed to the terms, you may turn your computer on.



Open Latch



Move the power switch toward the rear direction and hold one second until the power indicator (⏻) goes on before releasing it (page next "CAUTION")

First-time Operation

CAUTION

- Do not slide the power switch repeatedly.
- After you have turned your computer off, you must wait five seconds before you can turn it back on.

NOTE

The computer will not power on when the LCD panel is closed.

5 Setup Windows

The [Windows 95 Setup Wizard] will run after the computer is turned on. Simply follow the on-screen instructions.

When the setup procedure is completed, the Windows screen appears.

NOTE

- Please read the supplemental “Windows 95 Setup Procedure” for a more detailed explanation (☞ page 67).
- Moving the cursor (⏏) or selecting items can be done through the track ball and click buttons. (☞ page 15).
- If the display is dim or the sound quality is not right, you can adjust the brightness and volume. (☞ page 7, 8, 74).

Internet Explorer

Internet Explorer 4.0 places a tremendous load on the system in order to execute the wide variety of functions that it provides.

As a result, some unexpected faults may occur.

Example: ● It takes a long time to reboot or the computer locks up.

- The software cannot be upgraded.
- A system module error occurs.

If any of these faults occurs, try using the software with some Internet Explorer 4.0 functions turned off. (See Internet Explorer Help for more details.)

Example: ● Close the channel bar.

- Close the welcome message.
- Set the wallpaper to “None”.
- Uninstall Internet Explorer 4.0.

Starting Up/Shutting Down

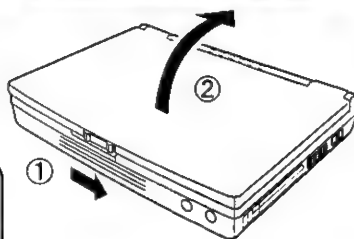
Starting Up

1 Open up the display

Slide the latch as shown and lift open the display.

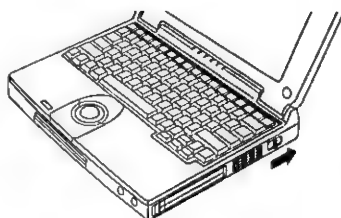
NOTE

The computer will not power on when the LCD panel is closed.



2 Turn your computer on

Move the power switch toward the rear direction and hold one second until the power indicator (⏻) goes on before releasing it.



CAUTION

- Do not slide the power switch repeatedly.
- After you have turned your computer off, you must wait five seconds before you can turn it back on.
- If the computer does not turn on when the power is switched on, the temperature of the CPU may have exceeded its normal operating temperature. In this case, a function designed to prevent it from overheating is triggered automatically and prevents the computer from turning on. Should this happen, allow the computer to cool down then switch the power on again. If the computer still does not turn on, please contact Panasonic Technical Support.

Starting Up/Shutting Down

- If "Type your password, then press Enter." or  is displayed,

you must first enter your User Password (☞ page 34).

Upon entering your
User Password and
pressing **Enter**.

"Type your password,
then press Enter."

or



If the correct password is input,



Over three incorrect attempts,

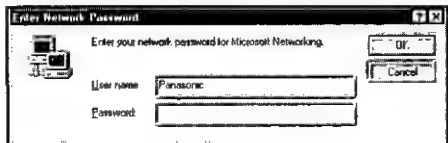


* If you are starting from the suspend mode (☞ page 16), if after three attempts the correct password is not input, or if no password is entered for about a minute, the computer returns to the suspend mode.

NOTE

If the display on the right appears,

The network password has been set. To read and write data to other computers, the correct password must be entered.

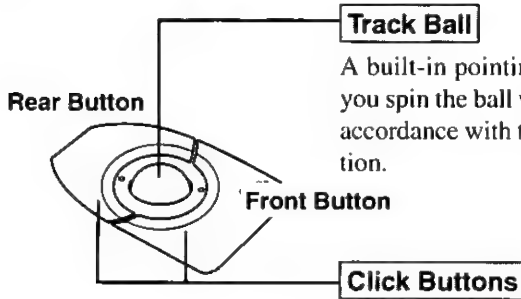


- When an application or file that was previously displayed appears on your screen,
this means the suspend or hibernation mode (☞ page 16) has been set.

3 Select your application

You are able to start working on your computer.

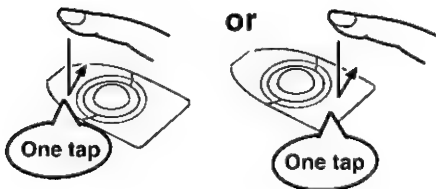
Using the Track Ball and Click Buttons



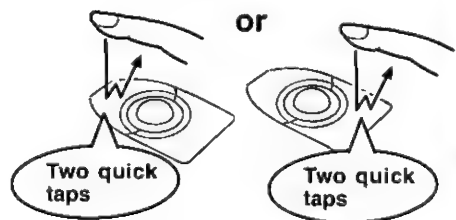
A built-in pointing device that works like a mouse. As you spin the ball with your fingertip, the cursor moves in accordance with the speed and direction of the ball's motion.

When pressed while the track ball is in use, the buttons select items or perform other operations.

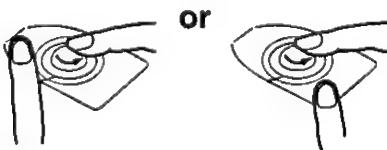
● Clicking



● Double-clicking



● Dragging



NOTE

- The actions of the two buttons vary according to the software application being used. Normally the rear button is used to perform actions.
- For detailed information on how to use the track ball and buttons, see the included Windows 95 book.
- The track ball is an optical track ball. Optical track balls are not adversely affected by dust, debris, etc., as long as they are used in a normal manner.

Starting Up/Shutting Down

Shutting Down (power off your computer)

- 1 To shut down, save all data and select [Shut Down] from the [Start] menu

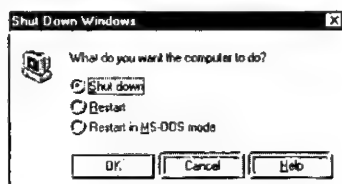
NOTE

From the keyboard,

You may choose to press down on



then select [Shut Down].



2 Confirm shutdown

Select [Shut down], then click [OK].

Your computer will power off automatically.

● Restarting your computer (without shutting down)

Select [Restart], then click [OK].

NOTE

To quickly resume computer operation after shutting down,

The suspend and hibernation functions are available. (➡ below)

CAUTION

- Do not power off your computer while the HDD indicator is on. It may damage data on the hard disk.
- If the computer will not be used for a long period of time, power off and disconnect the AC adapter.

(If the cord is kept connected, a very low level of power equivalent to approx. 1.2 W will be consumed.)

Starting Up Your Computer Quickly

If you want to immediately start up and continue an application after shutting down your computer, you can do so by using the suspend or hibernation function.

● Differences between suspend and hibernation function

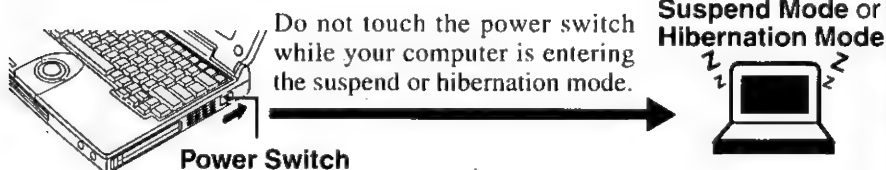
Function	Suspend function	Hibernation function
Where data is saved to	Memory	Hard disk
Speed	Fast	Somewhat slow
Requires power supply	Yes (if power is cut, all data is lost)	Power not required to maintain data

Shutting Down

● Using the suspend or hibernation function

It is necessary to set the suspend or hibernation function using the Power Management Setting.

- 1** Click [Start], then point [Programs] - [Panasonic]
- 2** Click [Power Management]
- 3** Click [Operation Setting], then set [Suspend] or [Hibernation] for [Power Switch]
- 4** Click [OK]



NOTE

You can also run [Power Management] from the Setup Utility (☞ page 71).

CAUTION


- Save all data before powering off your computer.
- When restarting from or shutting down to the suspend or hibernation mode, do not touch the track ball (or move the mouse (serial or PS/2 type) if one is connected). There are cases where these devices will fail to operate; you will have to restart your computer using the keyboard (☞ page 16 "NOTE").
- Do not power off during the following periods (you may corrupt your data or file):
 - While the FDD, HDD or CD-ROM is being used.
 - While playing/recording audio files.
 - While communications software is being used.
- Do not use the suspend or hibernation function when using an OS other than Windows 95, the diagnostics program (DIAGM31), the Setup Utility, or when experiencing static electricity or noise.

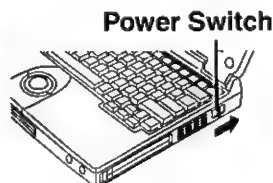
Starting Up/Shutting Down

CAUTION

- If you hold down on the **(Alt)**, **(Ctrl)** or **(Shift)** to enter the suspend or hibernation mode, after resuming operation, you must press the same key. For example, if you hold down on the **(Shift)** key while sliding the power switch, upon resuming, if you do not press the **(Shift)** key again, only capital letters will result from typing.
- If your computer locks up, press the reset button. All data not saved is lost when this button is pressed.
- In the suspend mode, power is consumed. If PC Cards (e.g., modem card) are inserted, more power is consumed. When all power has been consumed, all data at shut down is lost since it is retained in memory. We therefore recommend plugging in the AC adapter when using the suspend function.
- When a file in an external device such as a CD-ROM drive, external hard disk, or ATA card is opened, the suspend or hibernation function may not work. In such cases, close the file.
- SCSI cards may not recover operation after entering the suspend or hibernation mode. If this occurs, restart the computer.
- A fixed memory data writing area is needed on the hard disk to use the hibernation function. This area is already created on the hard disk at the time of purchase. It will be necessary to create the area again if you format the hard disk (☞ page 68).

Resuming Operation

If "Type your password, then press Enter." or  is displayed upon sliding the power switch, your password has been set (☞ page 14).



CAUTION

When operation resumes, serial devices such as a mouse or modem, or your PC Cards may not work. In such cases, you will need to restart your computer or reinitialize the individual devices.

Creating Backup Disks

Create the backup disks (total of 8 disks), listed below, in case you need to reinstall the software (e.g., if the hard disk contents are erased). The backup disks created, described below, are also used to run self-diagnostics programs, etc.

1. Windows 95 CD-ROM Setup Boot Disk (1 disk)
2. Firstaid FD (1 disk)
3. Driver Disk (2 disks)
4. Utility Disk (3 disks)
5. Windows 95 Startup Disk (1 disk)

NOTE

Backup disks may be created repeatedly, however, they cannot be recreated after reinstallation.

The following items are necessary:

- Port Replicator
- External floppy disk drive
- 8 2HD floppy disks. Format these disks (Not included).
- Floppy disk label "Microsoft Windows 95 CD-ROM Setup Boot Disk".
- 7 floppy disk labels (Not included)

1 Power off your computer (☞ page 16) and disconnect the AC adapter

Do not shut down using the suspend or hibernation mode.

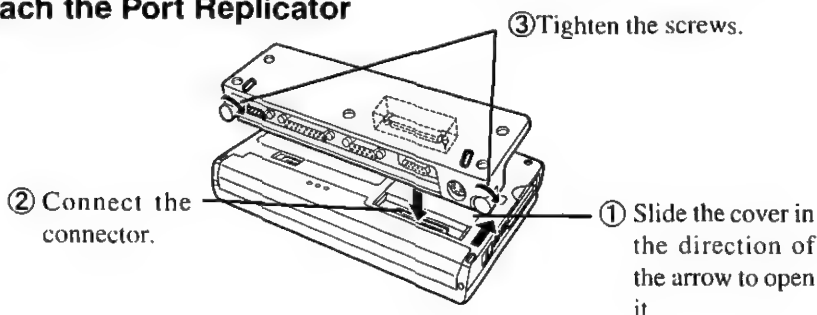
2 Turn over the computer

3 If an extended life battery pack (CF-VZSU03) is connected to your computer, remove it (☞ page 30)

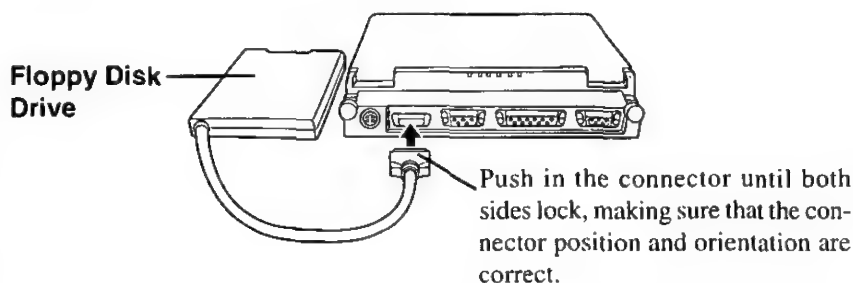
If you are using the included battery pack, it does not need to be removed.

Creating Backup Disks

4 Attach the Port Replicator



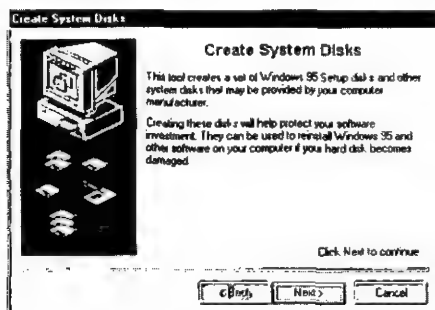
5 Attach the external floppy disk drive



6 Connect the AC adapter, then open the display panel and turn on the power

The Windows screen will be displayed.

7 Click [Start], then move the cursor to [Programs]-[Accessories]-[System Tools], then click [Create System Disks]



NOTE

Until you create backup disks, the [Create System Disks] window will be displayed once every specified number of times you start Windows (the default setting is once every five times).

8 Click [Next]

The [Select Disk Set To Create] window will be displayed.

9 Create the backup disks in sequence

In the [Select Disk Set To Create] window, select the disks to be created, then follow the on-screen instructions.

A label is included for the Windows 95 CD-ROM Setup Boot Disk. Attach this label to the created disk. Also attach labels to the other created backup disks. Name each disk using the titles shown during the backup procedure.

CAUTION

If an error occurs while you are creating backup disks, click [Cancel] to close the [Create System Disks] screen, then restart Windows 95. After restarting, start over at the beginning of the backup disk creation procedure.

10 Make a copy of the CD-ROM driver

Copy the necessary driver, from the floppy disk included with your CD-ROM drive, to the Windows 95 CD-ROM Setup Boot Disk. It will be necessary to edit the CONFIG.SYS file and AUTOEXEC.BAT file on the Windows 95 CD-ROM Setup Boot Disk. When editing the AUTOEXEC.BAT file, be careful not to delete lines containing settings for CAB files to be copied to the C drive on the hard disk.

Some CD-ROM drives require card managers (card and socket service). See the manual included with your CD-ROM drive for further details.

Computing On The Road

One of the main features of notebook-type computers is that you have the power of computing away from your home or office. In the following, information is provided on how to maximize use of the battery pack which is necessary for such computing.

Four Important Points

- POINT-1** Be sure to charge your battery before and after use.
- POINT-2** To get the maximum use of your battery, set the power management mode.
- POINT-3** Check to see that you have your AC adapter with you before leaving your home or office.
Purchasing an extra battery (CF-VZSU02/03) is highly recommended.
- POINT-4** Always watch your battery level!

Conserving Power

Things to Remember

- Leave your computer off when it is not in use (☞ page 16)
- Adjust the brightness (dark) with **[Fn]+[F2]** (☞ page 74)
- Before stepping away from your computer, press **[Fn]+[F10]** to put your computer in the standby mode
The standby mode helps you conserve power by cutting off power to the hard disk drive's motor and LCD. To resume, you may press any key.
- In the power management mode, the setting of [Power Saving] is recommended (☞ page 24)

● **Enter the following settings under [Operation Setting] in [Power Management]** (☞ page 24)

- **Panel Switch: Suspend**

The system will enter suspend mode and the power indicator will turn off when the LCD panel is closed. The system will resume when the LCD panel is opened.

- **Automatic Hibernation: Enabled**

After the system enters the suspend mode, it will automatically change to hibernation mode when a preset length of time, set in the [Operation Setting], has elapsed.

- **Turn off PC Card in Suspend Mode: Enabled**

The PC Card power is turned off in suspend mode.

Computing On The Road

Setting Power Management

(How to set [Power Saving] and [Operation Setting])

- 1** Click [Start], then point to [Programs], then [Panasonic]
- 2** Click [Power Management]
- 3** Click [Power Saving] tab, then set [Power Saving] under [Battery] or [AC]

NOTE

- When this command is used, if the AC adapter is connected, the [AC] setting will be changed. If the AC adapter is not connected, the [Battery] setting will be changed.
- The **[Fn]** and **[F6]** keys can be pressed together to toggle the mode in the following sequence: Standard --> Power Saving --> User Setting.

- 4** Click [Operation Setting] tab, then set [Suspend] under [Panel Switch]
- 5** Enter a check next to [Enable Automatic Hibernation], and set the time which must elapse before the change takes place
- 6** Select [Turn Off PC Card in Suspend Mode]
- 7** Click [OK]

NOTE

You can also run [Power Management] from the Setup Utility (☞ page 71).

● Power Management Settings

The settings are the same for [AC] and for [Battery].

Function \ Setting	Standard	Power Saving	User Setting
CPU Speed (%)	100	25	100, 75, 50, 25, 12.5
CPU Speed Change Mode	Disabled	Enabled	Enable, Disable
HDD Motor Timeout (min)	Disabled	2	1, 2, 5, 10, 15, 30, Disable
Standby Timeout (min)	30	2	1, 2, 5, 10, 15, 30, Disable
Suspend Timeout (min)	Disabled	10	1, 2, 5, 10, 15, 30, Disable
LCD Backlight	Bright	Power Saving	Bright, Medium, Dark, Power Saving

- **CPU Speed Change Mode** : The CPU is automatically stopped when there are no operations.
- **Standby Timeout** : When the computer is idle or a device is not accessed, the computer enters the standby mode after a preset interval of time.
- **Suspend Timeout** : When the computer is idle or a device is not accessed, the computer enters the suspend mode after a preset interval of time.
- **HDD Motor Timeout** : When the hard disk drive is not accessed, power to the motor is shut off after a preset interval of time.
- **LCD Backlight** : [Bright] [Medium] [Dark] [Power Saving]
Bright <-----> Dark

CAUTION

When installed in a network environment.

After resuming operation from the hibernation mode, the network connection may be severed or the computer will not work properly.

When a device like a high-speed modem or ISDN terminal adapter is connected to the serial port, etc.

There are times when high-speed communication is adversely affected if the power management function is enable. Please disable the power management function.

Key operation and music playback.

When the power saving function is running, the keyboard and mouse operations may feel sluggish. Also, music may not play correctly when entering the standby mode during operation.

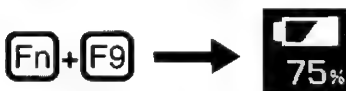
Computing On The Road

Battery Status


Use the Battery Indicator () to check on the battery status.

Battery Indicator	Battery Status
Orange	Charging
Green	Fully-charged
Red	Battery charge is low The battery must be charged. A beeping sound will be heard after the battery indicator has changed to red. Connect the AC adapter immediately. If the AC adapter is not available, quit all programs being run and turn off the power.
Blinking orange	The battery cannot be charged The battery pack cannot be charged since its temperature is outside the 5°C to 35°C (41°F to 95°F) range. Return the battery pack to a temperature at which it can be charged and try charging again.
Blinking red	The battery or AC adapter may not have been connected properly. Make the proper connections. If the problem persists, contact Panasonic Technical Support.

● Getting a detailed reading



NOTE

When the battery pack is not in the computer,  is displayed.

● If it seems that the battery status has not been checked properly ("Accurately Displaying Battery Capacity" on page 32)

When the remaining battery charge becomes low

Perform the following:

- Plug in the AC adapter, and fully charge your battery.
- Use a spare battery, if available.
- If you have neither the AC adapter nor an extra battery, save your data and power off your computer.

● If the suspend or hibernation function is set

Red indicator lights
Beep sounds*



 Suspend or Hibernation Mode

● If the suspend or hibernation function is not set

Red indicator lights



Beep sounds*



 Computer goes off

* When disabling the speaker by pressing **(Fn)+(F8)**, the warning beep is also disabled.

NOTE

- When the battery capacity runs low, the CPU speed will be reduced to 25% regardless of its setting. (→ page 25)
- The battery operating time is approximately 2.5 hours with the included battery pack, and approximately 8 hours with the extended life battery pack (CF-VZSU03).

Using the Battery Pack

Precautions

● Handling precautions

- Care should be exercised with regard to the following in order to avoid the possibility of liquid leakage, overheating, or bursting.
 - Do not throw the battery pack into a fire or expose it to excessive heat.
 - Do not place the battery pack together with articles such as necklaces or hair-pins when carrying or storing it.
 - Do not insert sharp objects into the battery pack, expose it to bumps or shocks, deform it, disassemble it, or modify it.
 - Do not short the positive (+) and negative (-) contacts.
 - The battery pack is rechargeable and is designed for use with the CF-M31M or the specified charger. Do not use it with a computer or charger other than the one for which it was designed.
 - Do not charge, use or leave the battery pack for extended periods where it will be exposed to direct sunlight, in a hot place (in an automobile on a sunny day, for example), or in a cold place.
- When transporting spare batteries inside a package, briefcase, etc., it is recommended that the batteries be stored in a plastic bag.
- Do not expose the battery to water or allow it to become wet.
The terminals may corrode.
- Dirt on the terminals may impair contact and/or make it impossible for the battery to be charged adequately. Wipe off the dirt using a dry cloth, cotton swabs, etc.
- If, due to damage, battery electrolyte comes in contact with skin or clothing, wash it off immediately and thoroughly with water. Consult your physician if you feel any physical discomfort.
- Should the battery leak and some of the fluid get into your eyes, do not rub your eyes. Immediately flush your eyes with clear water and see a doctor for medical treatment as soon as possible.
- Keep batteries out of the reach of children.
- Do not put the battery into a microwave oven or a pressurized chamber.
- Should the battery emit an abnormal odor, become hot to the touch, become discolored, change shape, or become in any way different from normal, remove it from the unit and discontinue use.
- Do not carry the computer by gripping the optional extended life battery pack (CF-VZSU03).

● Notice concerning operating temperature

- The recommended environment, operating temperature of the computer is between 5°C and 35°C (41°F and 95°F). The battery's operating time will decrease if the operating temperature is low.
- The battery pack will become somewhat warm during normal use. This is not a malfunction.

● Notice concerning charging

- Since the battery pack is not charged when the computer is purchased, be certain to charge the battery before using the computer.
Charging commences automatically when the battery pack is inserted into the computer and the AC adapter is connected.
- If the battery pack is not used for an extended period of time, be sure to charge it before use. In such cases, the charging process may not be completed in the normal length of time, but this is not an indication that the battery is malfunctioning.
- Do not remove the AC adapter while the battery is being charged. Wait until the battery is fully charged (until the battery indicator turns green) before removing the AC adapter.
- Charge the battery pack in the usage temperature range (5°C to 35°C (41°F to 95°F)). It may not be possible to charge the battery pack if the temperature is outside the usage temperature range, or is in the usage temperature range but the battery pack becomes too hot or cold due to usage conditions. (If this happens, the battery indicator will blink orange.) In such cases, take steps such as adjusting the room temperature or refrain from using the computer for a period of time. Charging will start automatically once the battery pack temperature returns to the specified temperature range.
- If the battery pack is attached and detached repeatedly and is charged each time, an overcurrent will result, generating heat. This should not be done as it will cause the battery pack to age.
- The battery pack is not a permanent part. If the battery pack operating time shortens significantly, and if its capabilities are not restored after repeated charging, then the battery pack has reached the end of its service life. Replace it with a new battery pack.
- If the battery indicator blinks red when charging is commenced or when it is underway, it may mean that the internal protection circuit has been activated and charging has been suspended. In such cases, disconnect the AC adapter and battery pack from the computer, then re-install them. If this problem persists, contact Panasonic Technical Support.

Using the Battery Pack

Installing/Removing the Battery Pack

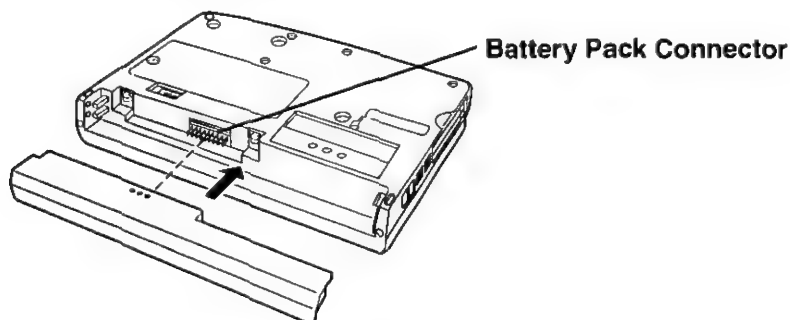
1 Power off your computer (☞ page 16)

Do not shut down using the suspend or hibernation mode.

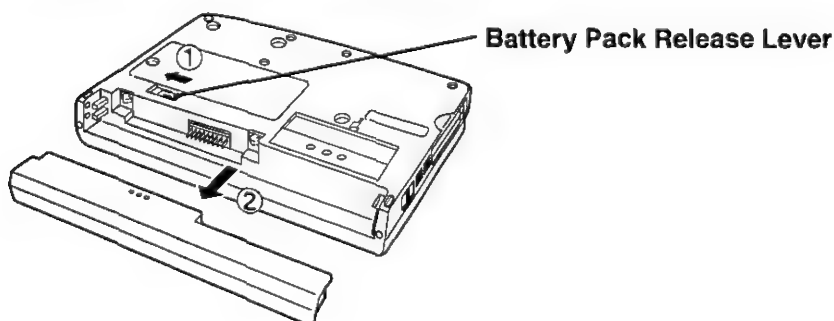
CAUTION

In the suspend mode, do not remove/change the battery pack. Removing the pack in the suspend mode will erase your data and may damage the computer.

2 ● Installing the battery pack



● Removing the battery pack



NOTE

The installing, removing and charging procedures for the optional extended life battery pack (CF-VZSU03) are the same as the included battery pack.

Charging

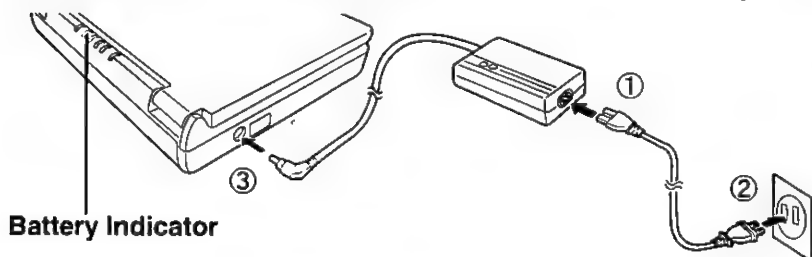
Since the battery pack is not charged when the computer is purchased, be absolutely sure to charge the battery before using the computer.

Proceed with the charging while the battery pack is installed in the computer.

1 Connect the AC adapter

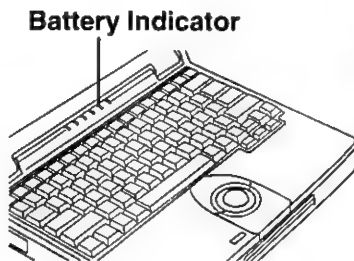
Charging commences automatically.

While the battery pack is being charged, the battery indicator will light orange.



2 Check the charging status

When the battery pack has finished charging, the battery indicator will change to green.
(☞ page 26)



Charging Time

	CF-VZSU02	CF-VZSU03
Power On	Approx. 5 hours	Approx. 13 hours
Power Off	Approx. 2.5 hours	Approx. 6.5 hours

(Varies depending on the usage conditions)

NOTE

Approximately 30 mW of power is consumed even when the computer's power is off. This means that after a full charge the battery pack will discharge in approximately 20 days. Recharge it prior to use.

Using the Battery Pack

Accurately Displaying Battery Capacity

The battery pack has a function for measuring, storing, and learning about battery capacity. Using this function properly to accurately display remaining battery capacity requires that the battery pack be fully charged (charged to 100%), then fully discharged, and then fully charged again.

Use the procedure presented below to fully charge the battery pack, then discharge it, then charge it again. This procedure should be performed once after you purchase the computer. As you use the battery pack over a long period of time, the remaining capacity display may become inaccurate due to aging of the battery pack and other factors. The procedure described below should be repeated.

1 Attach the battery pack, then connect the AC adapter

CAUTION

In some cases, the remaining capacity display (shown through key actions) may give a reading of 100% capacity even though the battery indicator remains orange. Simply continue charging the battery pack until the indicator turns green.

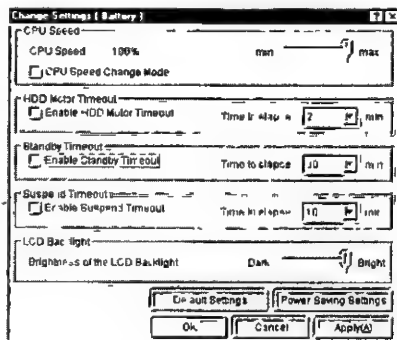
2 Once the battery indicator turns green, remove the AC adapter (full charge)

3 Use the computer without turning it off until there is no remaining battery capacity and the computer automatically enters suspend mode or hibernation mode (full discharge)

● If you are going to leave the computer idle without using it:

Be sure to enter the following settings

- 1 In [Power Saving] under [Power Management], select [User Setting] under [Battery], then click on [Change Settings]
- 2 Click [Default Settings], then uncheck the check box to the left of [Enable Standby Timeout] under [Standby Timeout] (this disables standby timeout)



(☞ page 24 for further details on Power Management Settings)

CAUTION

- Do not connect the AC adapter or turn off the computer until the system enters suspend or hibernation mode. Doing so will make it impossible to measure the battery capacity.
- If the battery indicator turns red and the computer starts beeping, or if a Windows warning message is displayed indicating that there is little remaining battery capacity, just continue using the computer.

4 Connect the AC adapter and charge the battery pack until the battery indicator turns green (full charge)

CAUTION

Any data which has not been saved, while in suspend mode, will be lost if the computer is left idle. The battery pack should be charged immediately.

Security Measures

When you do not want your computer to be used without permission

Set the User Password.

Without the password, access to your computer is impossible.

● When the user password is set

Upon entering your User Password and pressing **Enter**.

"Type your password, then press Enter."

or



If the correct password is input,



Over three incorrect attempts,



* If you are starting from the suspend mode (☞ page 16), if after three attempts the correct password is not input, or if no password is entered for about a minute, the computer returns to the suspend mode.

Setting the user password (enabling, changing, disabling)

1 Run the Setup Utility (☞ page 71)

2 Using **↓** and **↑**, select [Security Setup] then press **Enter**

3 Press **Enter**

4 ● To enable or change your password

1. Enter your password at the [Enter User Password], then press **↓**.
2. Re-enter your password at the [Enter User Password Again].
(This is for confirmation purposes.)
3. Using **↓** and **↑**, select [Set User Password] then press **Enter**.

CAUTION

- Your password will not be displayed on the screen.
- Please limit your password to seven characters. Note that there is no distinction between upper and lower case letters.
- White colored keys can be used. Note that space bar and function keys cannot be used.
- Do not input your password while holding down on the **Shift** or **Ctrl**.
- Use only the upper horizontal row of numeric keys to input user passwords.
- Do not forget your password. If a password is forgotten, you will be unable to use your computer.

● To disable your password

Using the **↓** and **↑** keys, select [Delete User Password] then press **Enter**.

5 At the confirmation screen, press **Enter**

6 Press **Esc** to end the password setting procedure

7 Close the Setup Utility (➤ page 72)

CAUTION

To prevent the changing of your password without permission

When running the Setup Utility program, do not leave your computer even for a short time.

Infrared Data Communications

Your computer is equipped with an infrared communication port enabling you to transfer data without a cable.

1 Set the address of your infrared communications port to enable

Run the Setup Utility, then set infrared address for [Infrared Port] and set [IrDA] for [Mode] in [Advanced Setup]. (☞ page 71)

2 Install the Windows 95 infrared communication driver

CAUTION

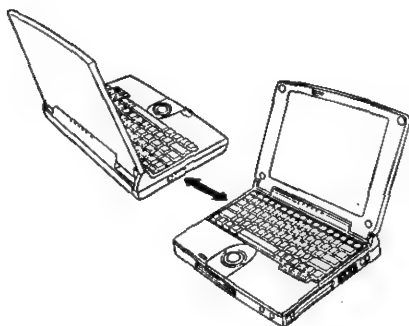
To install the infrared communication driver after reinstallation;

You must insert the Windows 95 CD-ROM (included) after Step 8. below. Therefore a PC Card-compatible CD-ROM drive should be connected. (See the manual included with your CD-ROM drive for details on how to connect it.)

1. Click [Start], then [Settings], then [Control Panel]. Double-click the [Add New Hardware].
2. When the [Add New Hardware Wizard] opens, click [Next].
3. The following message will be displayed: "Do you want Windows to search for your new hardware?". Select [No], then click [Next].
4. Under [Hardware types], select [Infrared], then click [Next].
5. When the [Add Infrared Device Wizard] opens, click [Next].
6. Under [Manufacturers], select [Standard infrared devices], then click [Next].
7. In the port selection window, select [Generic Ir Serial Port (COM2)], then click [Next].
8. Select [Use default ports], then click [Next].
The infrared communication driver will be set up.
9. Click [Finish].

3 Prepare for Infrared Data Communications

- Position your computer so that the port is face-to-face with the port of another computer.
- A port-to-port distance of 20 to 50 cm (8 to 20 inches) is recommended.
- When connecting the AC adapter, make sure that the plug does not interfere with the port.



NOTE

Problems with infrared data communications

- An object is located between both ports.
- There are other electronic devices nearby causing interference, such as, a television, VCR, wireless headphone, etc.
- Direct sunlight or white glowing light, such as fluorescent lighting; can cause interference with communications between the ports.

4 Perform infrared communications

Perform communications using a store-bought infrared communications software application or [Direct Cable Connection] in Windows.

Add-ons/Peripherals

Devices capable of being used by your computer are listed in the table below.

Device(s)	Where to connect	Reference
Port Replicator	Expansion Bus Connector	☞ below
External Floppy Disk	FDD Port	☞ page 41
PC Cards (Modem, LAN, SCSI, etc.)	PC Card Slots	☞ page 42
Serial Devices (Mouse, Modem, etc.)	Serial Port	☞ page 40
Extra Memory	RAM Module Slot	☞ page 44
External Display	Ext. Display Port	☞ page 46
Printer	Parallel Port	☞ page 47
Keyboard, External Mouse [Type PS/2], etc.	Ext. Keyboard/Mouse Port	☞ page 40
Speaker/Headphone	Headphone Jack	☞ page 8
Microphone	Microphone Jack	☞ page 8

CAUTION

Do not install or remove peripherals while your computer is in the suspend or hibernation mode; abnormal operation may result.

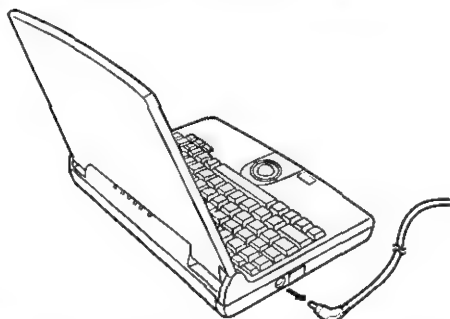
Connecting/Disconnecting the Port Replicator

Connect the port replicator to the computer before connecting devices such as an external floppy disk drive or an external display.

1 Power off your computer (☞ page 16)

Do not shut down using the suspend or hibernation mode.

2 Disconnect the AC adapter

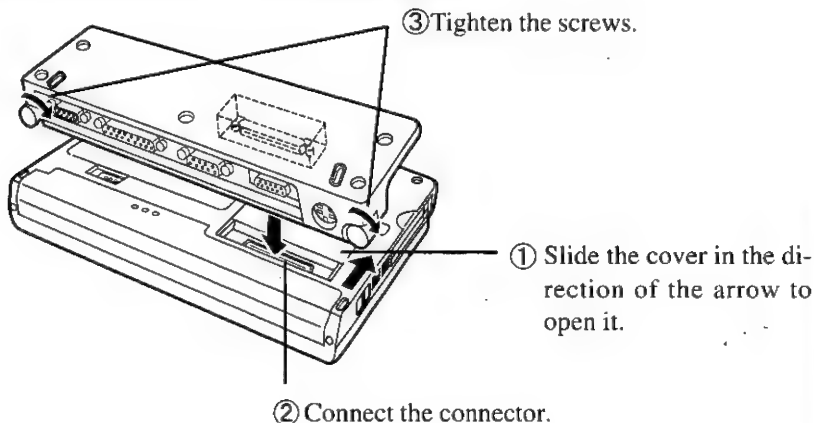


3 Close the display, then turn your computer over

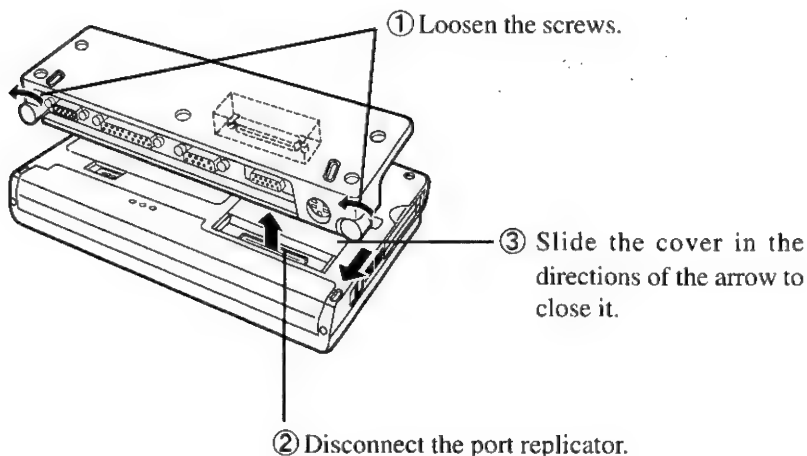
4 If an extended life battery pack (CF-VZSU03) is connected to your computer, remove it (☞ page 30)

If you are using the included battery pack, it does not need to be removed.

5 ● Connecting the Port Replicator

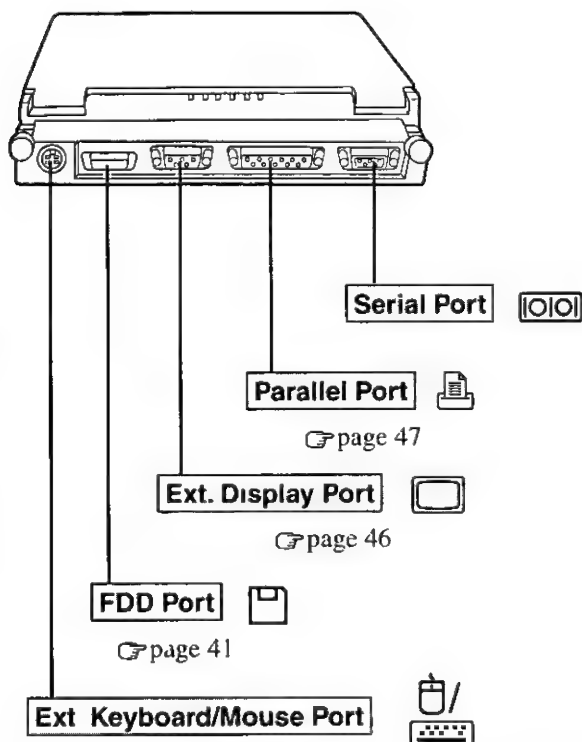


● Disconnecting the Port Replicator



Add-ons/Peripherals

Port Replicator Attachment Diagram



Use this port to connect PS/2 external mouse or external keyboard

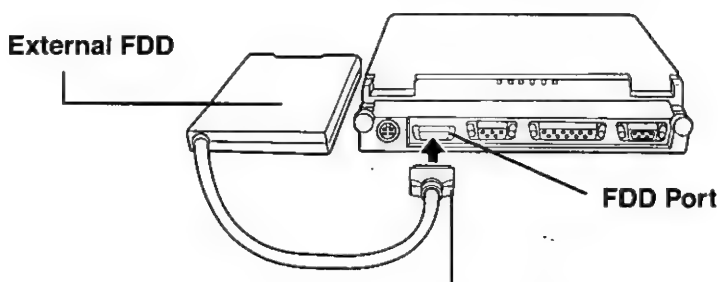
Using the External Floppy Disk Drive (FDD)

To use floppy disks, connect the included external floppy disk drive.

Connecting/Disconnecting the External FDD

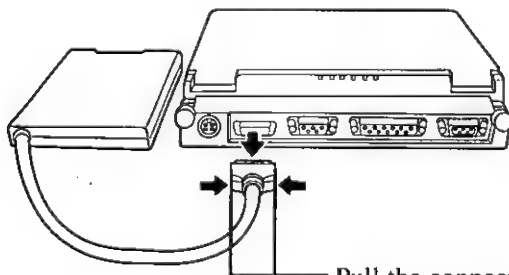
1 Connect the Port Replicator (☞ page 38)

2 ● Connecting the External FDD



Push in the connector until both sides lock, making sure that the connector position and orientation are correct.

● Disconnecting the External FDD

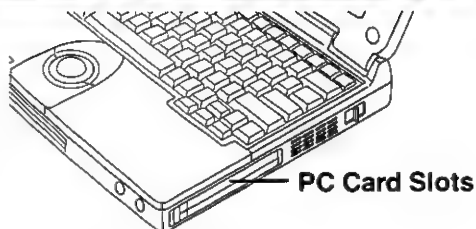


Pull the connector in the direction indicated by the arrow while holding down the unlock levers.

Add-ons/Peripherals

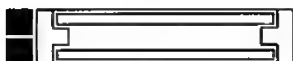
Using PC Cards

Your computer has two PC Card slots. These slots conform to the PC Card Standard; therefore, communications and SCSI devices may be utilized. The slot allows you to use two Type I or Type II cards (or one Type I and one Type II), or one Type III card.



● Type I or II

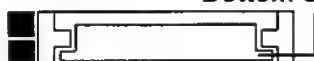
Two cards can be used simultaneously.



● Type III

One card can be used only in the bottom slot.

Bottom Slot



CAUTION

- Please check the PC Cards' specifications. Be sure the total operating current does not exceed the specified limit. Damage may result otherwise. Allowable Current (total for two slots) : 3.3 V: 800 mA, 5 V: 600 mA
- PC Cards which require a 12 V power supply cannot be used.
- SRAM and FLASH ROM (except for ATA interface) cards are not supported.
- There are times when both a Type I card and a Type II card will not work at the same time.
- When using a CardBus type card, use only that card; do not insert any other PC Cards.
- Only the bottom slot can support a Zoomed Video (ZV) card.

Installing/Removing the PC Card

CAUTION

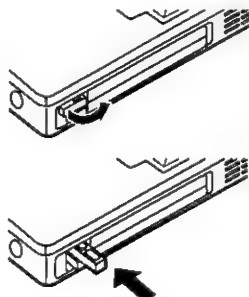
Before removing a PC Card, go to [Socket Status] (in [Start] - [Settings] - [Control Panel] - [PC Card (PCMCIA)]), select the PC Card slot and press [Stop].

● Removing the PC Card (or the dummy card)

Pull the button out and then press it

NOTE

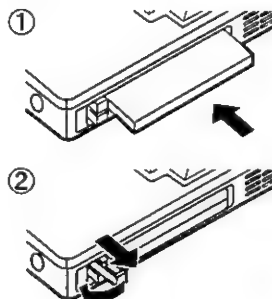
Dummy cards are provided at the time of purchase. They provide protection for the PC Card slots against such things as dust.



● Installing the PC Card

- ① Simply slide the PC Card in until it snaps into place
- ② Pull the button out and return it to the original position

Please refer to the manual for each card on how to install the card (insertion is typically label-side up)



NOTE

- You may need to install a driver from the Windows 95 CD-ROM (included) or a PC Card's floppy disk. Simply follow the on-screen instructions and read the PC Card's operation manual on how to install the driver.
- **Using CardBus compatible PC Cards**
Set the operating mode to [CardBus Mode] under [Advanced Setup] in the Setup Utility. "Utility Disk 3" is needed to change the settings. The mode which is set at the time of purchase is PCIC Compatible Mode.
- **Using ZV Port Compatible PC Cards**
Some ZV port compatible PC Card driver software may not be compatible with this PC Card controller of this computer. Check with your Panasonic dealer when making your purchase. See the manual included with the PC Card for information on how to operate the ZV port compatible PC Card.

Add-ons/Peripherals

Adding Memory

CAUTION

RAM modules are extremely sensitive to static electricity. There are cases where static electricity generated by the human body has adversely affected such modules. In addition, it is easy to damage the RAM modules or internal components of the computer. Therefore, when installing or removing a RAM module, handle the module with extreme care.

Installing/Removing the RAM Module

1 Power off your computer (☞ page 16)

Do not shut down using the suspend or hibernation mode.

RAM module specifications

144 pins, 60 ns, 3.3 V,
SO-DIMM, without Parity, Self refresh, EDO

2 Disconnect your computer from the power outlet

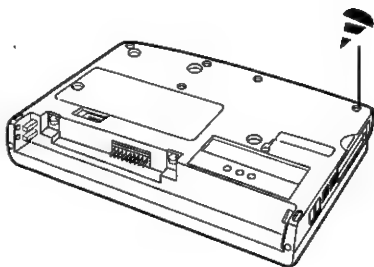
3 Remove the battery pack (☞ page 30)

4 Turn your computer over and use a screwdriver to remove the screw shown in the illustration

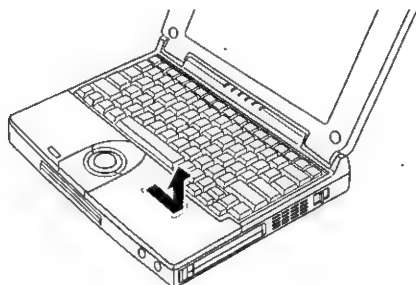
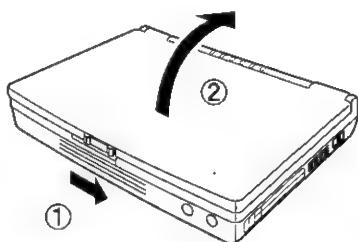
CAUTION

There are many screws on the bottom of the computer. When removing the screw to add memory, be sure to remember the proper position (☞).

Do not remove a screw other than the one shown in the illustration.



5 Open the display and remove the memory cover

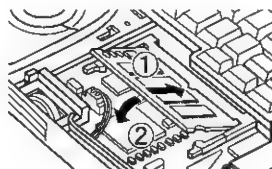


CAUTION

Do not touch the terminals or internal components, insert objects other than the module, or allow foreign particles to enter. Doing so may cause damage, fire or electric shock.

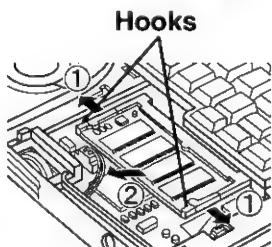
6 ● Installing the RAM module

- ① Slide the module in at an angle.
- ② Snap the module into place by pushing it down.



● Removing the RAM module

- ① Open the left and right hooks.
- ② Gently remove the RAM module from the slot.



7 Put the cover back into place, then close the display

8 Turn your computer over and use a screwdriver to fasten the screw

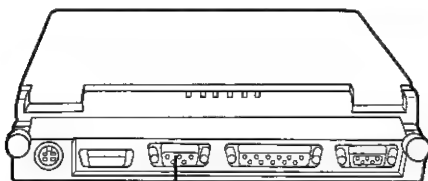
Add-ons/Peripherals

Using an External Display

1 Power off your computer (☞ page 16)

Do not shut down using the suspend or hibernation mode.

2 Connect the external display to your computer



Ext. Display Port

NOTE

For more detailed information, please refer to the operation manual of the external display.

3 Turn on the display, then turn on your computer with the LCD panel opened

● To display on both the LCD of your computer and the external display

1 Run the Setup Utility (☞ page 71).

2 Using **↓** and **↑**, select [Video Setup] then press **Enter**

3 Using **↓** and **↑**, select [Display], set [Simultaneous] with **→** then press **Esc**

4 Close the Setup Utility (☞ page 72).

5 Select your external display

Set your external display for [Models] in [Start] - [Settings] - [Control Panel] - [Display] - [Settings] - [Advanced Properties] - [Monitor] - [Change] - [Show all devices], then press [OK].

NOTE

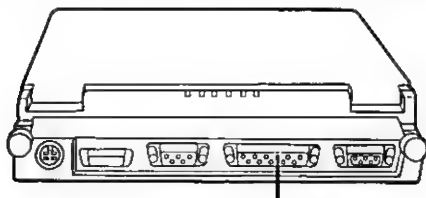
By pressing **Fn** + **F3**, you can choose to select either an external display or the LCD, or simultaneous.

Using a Printer

1 Power off your computer (page 16)

Do not shut down using the suspend or hibernation mode.

2 Connect the printer to your computer



Parallel Port

3 Turn on the printer, then turn on your computer with the LCD panel opened

4 Setting your printer

Go to [My Computer] - [Printers]. Find your printer's icon, click on it, and click [File] - [Set As Default]. If no icon is available, select [Add Printer] and install the driver program.

NOTE

You may need to install a driver for your printer. Simply follow the on-screen instructions and refer to the operation manual for the printer on how to install the driver.

Computer Diagnosis

List of Error Codes

If a problem occurs with your hardware, [POST Start up Error(s)] is displayed along with the error code(s), follow the on-screen instructions.

Setup: Setup Utility (☞ page 71) is started. Run [Load Default Settings (PnP)]. Rerun the Setup Utility to input the appropriate operating environment settings.

Exit: Ignore the error message(s), and restart the computer.

Code	Description
062	Boot failure--default configuration used
101	System Board Failure
102	System Board Failure
106	System Board Failure
151	System Board Failure
161	Bad CMOS Battery
162	Configuration Change Has Occurred
162	Configuration Error
163	Date and Time Incorrect
164	Memory Size Error
201	Memory Data Error
604	Diskette Drive Error
1780	Hard Disk Error
8603	Pointing Device Error
	Default configuration in use
	Interrupt controller failure
	Timer 2 test failure
	Diskette controller failure
	Real-time clock failure
	Dead battery
	Configuration error
	CMOS checksum error
	Real-time clock is not updating
	Memory size error
	Memory data error
	Diskette drive 0 failure
	Fixed disk 0 failure
	Pointing device failure

Using the Self-diagnosis Program

Follow the procedure below to check whether each part of your computer is operating properly.

- 1 Remove all peripherals, except the floppy disk drive, then connect the computer to a power outlet**
- 2 To run the program, insert the Firstaid FD you created into the floppy disk drive, then turn your computer on**
- 3 At the MS-DOS prompt (A:>), input the following:**

DIAGM31

Follow the messages on the screen.

Dealing With Problems

When a problem occurs, please refer to this page. If the problem is due to a software application being used, please refer to the related manual. If you still cannot troubleshoot the problem, please contact Panasonic Technical Support.

● Starting Up

The computer doesn't work	<ul style="list-style-type: none">● Check that connections are secure between the computer and the AC adapter, and between the AC power cord and AC wall outlet.● The power will not turn on if the display panel is closed (i.e., if the panel switch is depressed). Turn on the power after opening the display panel.● Confirm that a fully charged battery pack is installed properly.● Press the reset button on the computer's bottom side to reboot the computer.● Remove the AC adapter and battery pack, then reattach them and start the computer again.● Have the hard disk contents been corrupted? In the Setup Utility, select [System Setup] and then change the [Boot Up Drive] in setting [FDD -> HDD]. Insert the Firstaid FD in the floppy disk drive and restart the computer. Check the hard disk contents.
Information on the display screen isn't visible.	<ul style="list-style-type: none">● The display may have automatically turned off due to the power-saving function. Move the power switch to restore the screen.● Has an [External display] been selected by the Video Setup in the Setup Utility and connected to an external monitor?● If your computer is connected to an external display and the internal LCD has been set to off, and the computer is placed in the hibernation or suspend mode, the internal LCD will remain in the off mode if the external display is not connected when the computer is restarted. In this case, re-connect the external display and reboot the computer.
You have forgotten the system password.	Contact Panasonic Technical Support.
The date and time are incorrect.	<ul style="list-style-type: none">● You can set the date and time through [Date/Time] in [Start] - [Settings] - [Control Panel].● If you continue to experience problems, the internal battery maintaining the clock may need to be replaced. Please contact Panasonic Technical Support.

● During Operation

The computer suddenly stops operating.	<ul style="list-style-type: none"> ● When operating the computer with a battery pack, the power may become depleted. You must connect the AC adapter. ● The system may have locked up due to a problem in the application software you are using. Stop using the application software and reboot the computer by pressing the reset button.
The battery indicator is red.	<ul style="list-style-type: none"> ● Battery is low. Connect the AC adapter to charge the battery. ● The AC adapter may not have been connected properly. Make the proper connection. ● There is a possibility that the battery capacity measuring function is not functioning properly. Follow the steps listed under "Accurately Displaying Battery Capacity" (☞ page 32).
The battery indicator blinks red.	<ul style="list-style-type: none"> ● The battery may not have been connected properly. Make the proper connection. ● If the problem persists, contact Panasonic Technical Support.
The battery indicator blinks orange.	<ul style="list-style-type: none"> ● The battery pack temperature may be outside the 5°C to 35°C (41°F to 95°F) range. Return the battery pack to a temperature at which it can be charged.
The beeper sounded.	<ul style="list-style-type: none"> ● The battery is nearly discharged. Connect the AC adapter to charge or install a fully charged battery pack.
The battery indicator not lit during charging.	<ul style="list-style-type: none"> ● The battery or AC adapter may not been connected properly. Make the proper connections. ● If the problem persists, contact Panasonic Technical Support.
A 100% reading is displayed by pressing Fn+F9, but the orange indicator lights for an extended period of time	<ul style="list-style-type: none"> ● There is a possibility that the battery capacity measuring function is not functioning properly. Follow the steps listed under "Accurately Displaying Battery Capacity" (☞ page 32).
Operations are slow.	<ul style="list-style-type: none"> ● There may not be enough memory. Add a RAM module (☞ page 44).

Dealing With Problems


● Display

No display after powering on;	<ul style="list-style-type: none">● The brightness can be adjusted with Fn+F2.● When purchasing the computer, the display setting has been preset for an external display. If you connect an external display, the screen is displayed on the external display.● When there is no display on an external display,<ul style="list-style-type: none">• Check your cable connection to the external display.• Confirm your display is powered on.● If your computer is connected to an external display and the internal LCD has been set to "off", and the computer is placed in the hibernation or suspend mode, the internal LCD will remain in the "off" mode if the external display is not connected when the computer is restarted. In this case, re-connect the external display and reboot the computer.
The display screen is cleared.	The standby or suspend/hibernation mode may have been established by the power-saving function. When the power switch is moved in either of these scenarios, the display screen returns.
An afterimage appears.	If an image is displayed for a prolonged period of time, an afterimage may appear. This is not a malfunction. The afterimage will disappear when a different screen is displayed.
Green, red or blue dots remain on the display.	As a characteristic of color display's, these dots are known to appear, but it does not indicate any malfunction.


● Disk Operations

The computer won't access the hard disk drive.	<ul style="list-style-type: none">● If the cause is unknown, contact Panasonic Technical Support.
The computer won't access the floppy disk drive.	<ul style="list-style-type: none">● Ensure that you have connected the external floppy disk drive securely.● Ensure that you have inserted the floppy disk securely into the drive.● Did you attempt to write to or read from a non-formatted disk? Floppy disks must be formatted before they can be used.● Ensure that the write-protect tab is in the write-enable position.
The computer won't format the floppy disk.	<ul style="list-style-type: none">● Ensure that the write-protect tab is in the write-enable position.● Ensure that you didn't mistype the command. Also check for mistakes in the command parameters.

● Setup Utility

 is displayed	Enter the User Password. If you have forgotten it, contact Panasonic Technical Support.
---	---

● Connecting Peripherals

Unable to print	<ul style="list-style-type: none">● Check the computer-printer connection.● Make sure the printer is on.● Make sure the printer is in the online state.● Make sure paper is in the printer tray and there is no paper jam.● Has the Setup Utility been used to set [Parallel Port] to [3F8], [278] or [3BC]?
The cursor does not move from mouse operations	<ul style="list-style-type: none">● Check the connection.● Confirm that the device driver for the mouse works. Please refer to the reference manual of the device.● Try setting the [Track Ball] to disable in the Setup Utility.● Has the Setup Utility been used to set [Serial Port] to [2F8] or [3F8]?● Check your mouse connection, then reboot the computer from the keyboard. From the keyboard, you may choose to press down on  then select [Shut Down].
The cursor does not move from track ball operations	<ul style="list-style-type: none">● Confirm that the device driver for the mouse works. Please refer to the reference manual of the device.● Try setting the [Track Ball] to enable in the Setup Utility.
The device connected to the serial port does not work	<ul style="list-style-type: none">● Check the connection.● Confirm that the device driver for the serial port works. Please refer to the reference manual for the device.● Confirm that two mouse devices are not connected, one through the ext. keyboard/mouse port and the other through the serial port.● Try setting the [Track Ball] to disable in the Setup Utility.● Has the Setup Utility been used to set [Serial Port] to [2F8] or [3F8]?

Dealing With Problems

A PC Card does not work	<ul style="list-style-type: none">● Make sure the card is properly inserted.● Confirm that the card conforms to the PC Card Standard.● A driver for Windows 95 may need to be installed.● Note that after a driver is installed, the computer must be rebooted.● Check that the proper port settings have been made.● Read the PC Card's manual. Or, you may need to call the source of the PC Card.
You do not know the available RAM module	☞ page 44
The RAM module has not been recognized	Make sure the RAM module has been properly inserted.
The address map for IRQ, I/O port address, etc. is unclear	Click [Start] - [Settings] - [Control Panel]. Double-click [System]. Check the address map by going to [View Resources] in [Device Manager] - [Computer] - [Properties].

Reinstalling Software

Software programs can be reinstalled in cases where, for example, the hard disk fails, information is lost, etc. However, some programs cannot be reinstalled.

Reinstalling Preparations

1 Prepare the following:

- 8 Backup disks created in advance (☞ page 19)
- Windows 95 CD-ROM and Internet Explorer CD-ROM (included)
- External floppy disk drive (included)
- PC Card-compatible CD-ROM drive

Prepare the CD-ROM drive used in Step **10** (☞ page 21) of the backup disk creation procedure.

2 Power off your computer (☞ page 16) and disconnect the AC adapter

Do not shut down using the suspend or hibernation mode.

3 Attach the external floppy disk drive (☞ page 41)

4 Attach the CD-ROM drive

See the manual included with the CD-ROM drive for information on how to attach it.

5 Remove all other peripheral devices

Reinstallation Procedure

1 Reset the Setup Utility settings to their defaults

1. Run the Setup Utility (☞ page 71).
2. Select [Load Default Settings] and press **(Enter)**.
3. When the [Load Default Settings] window is displayed, press **(Enter)**.
4. Select [Exit Setup] and press **(Enter)**.
5. Save the settings and exit.

2 Initialize the hard disk

There are two different procedures for initializing the hard disk.

For beginners: This method restores the hard disk to a condition similar to the condition at the time of purchase.

For advanced users: This method restores the C drive to a condition similar to the condition at the time of purchase.

Reinstalling Software

● Procedure for beginners

Insert the Firstaid FD which you made earlier in the floppy disk drive, then restart the computer.

- Start with Step 13. below if the hard disk partitions have not been changed since you bought the computer.
- Start with Step 1. below if the hard disk partitions have been changed since you bought the computer.

<Deleting set partitions>

1. At the (A:\>) prompt, type "FDISK" and press **(Enter)**.
2. The following message will be displayed: [Do you wish to enable large disk support (Y/N) ...?]. Type "N" and press **(Enter)**.
3. Select [3. Delete partition or Logical DOS Drive] then delete all of the set partitions in sequence.
4. After the deletion process is completed, press **(ESC)** to exit the FDISK command. Next, press **(Alt) + (Ctrl) + (Del)** to restart the computer.

<Creating hibernation data area> (created as Partition)

5. At the (A:\>) prompt, type "HBUTIL P 80" and press **(Enter)**.
6. The following message will be displayed: [Hibernation partition created]. Next, press **(Alt) + (Ctrl) + (Del)** to restart the computer.

<Creating C drive partition>

7. At the (A:\>) prompt, type "FDISK" and press **(Enter)**.
8. The following message will be displayed: [Do you wish to enable large disk support (Y/N) ...?]. Type "N" and press **(Enter)**.
9. Select [1. Create DOS partition or Logical DOS Drive] and press **(Enter)**.
10. Select [1. Create Primary DOS Partition] and press **(Enter)**.
11. The following message will be displayed: [Do you wish to use the maximum available size for a Primary DOS Partition and make the partition active (Y/N) ...?]. Type "Y" and press **(Enter)**.
The C drive partition will be created.
12. Press **(ESC)** to exit the FDISK command. Next, press **(Alt) + (Ctrl) + (Del)** to restart the computer.

<Formatting the C drive>

13. At the (A:\>) prompt, type "FORMAT C:" and press **(Enter)**.
14. The following message will be displayed: [Proceed with Format (Y/N) ?]. Type "Y" and press **(Enter)**.
15. After the formatting process is completed, a message will be displayed prompting you to enter a volume label. Type in a label if necessary. (Volume labels can be entered and changed after Windows is installed.)

● Procedure for advanced users

Do not use this initialization procedure unless you are very knowledgeable about computers. This procedure will be described below for two separate cases: setting the hibernation data area as a Partition, and setting it as a File.

When the hibernation data area is set as a Partition:

1. Insert the Firstaid FD which you made earlier in the floppy disk drive, then start the computer.

<Deleting set partitions>

2. At the (A:\>) prompt, type "FDISK" and press **(Enter)**.
3. The following message will be displayed: [Do you wish to enable large disk support (Y/N) ...?]. Type "N" and press **(Enter)**.
4. Select [3. Delete partition or Logical DOS Drive] then delete all of the set partitions in sequence.
5. After the deletion process is completed, press **(ESC)** to exit the FDISK command. Restart the computer.

<Creating hibernation data area>

6. At the (A:\>) prompt, type "HBUTIL P *" and press **(Enter)**. In place of the asterisk, enter the size of the system memory. For example, if the system memory size is 32 MB, type "HBUTIL P 32".
7. The following message will be displayed: [Hibernation partition created]. Restart the computer.

Reinstalling Software

<Setting individual drive partitions>

8. At the (A:\>) prompt, type "FDISK" and press **(Enter)**.
9. The following message will be displayed: [Do you wish to enable large disk support (Y/N) ...?].
- If you are initializing with FAT16, type "N" and press **(Enter)**.
- If you are initializing with FAT32, type "Y" and press **(Enter)**.

Important Information For Initializing With FAT32

- If the computer is started in an operating system which does not support FAT32 (such as starting MS-DOS from a floppy disk), the hard disk which is to be initialized in FAT32 will not be readable.
- Hard disk contents may be corrupted if you run a disk management utility which is not compatible with FAT32.

10. Select [1. Create DOS partition or Logical DOS Drive] to set the individual drive partitions.
11. After the partitions have been created, press **(ESC)** to exit the FDISK command. Restart the computer.
12. Format each drive using the FORMAT command.

When the hibernation data area is set as a File:

1. Insert the Firstaid FD which you made earlier in the floppy disk drive, then start the computer.

<Setting individual drive partitions>

2. At the (A:\>) prompt, type "FDISK" and press **(Enter)**.
3. The following message will be displayed: [Do you wish to enable large disk support (Y/N) ...?]. Type "N" and press **(Enter)**.
4. Select [3. Delete partition or Logical DOS Drive] then delete all unnecessary partitions.
5. Select [1. Create DOS partition or Logical DOS Drive] to set the individual drive partitions.
6. After the partitions have been set, press **(ESC)** to exit the FDISK command. Restart the computer.
7. Format each drive using the FORMAT command.

<Creating hibernation data area>

8. At the (A:\>) prompt, type "HBUTIL F" and press **(Enter)**.

9. The following message will be displayed: [Hibernation partition created.].
Restart the computer.

3 Install Windows 95

To restore the settings which were set at the time of purchase, set the options as shown below.

Option	Settings
Choose Directory	C:\WINDOWS
Setup Options	Typical
Select Components	Windows Messaging
	Microsoft FAX
	The Microsoft Network
	Accessories (select all)
	Disk Tools (select all)
	Multimedia (select all except CD Player)
	Accessibility Options
	For communications, do not change the default settings.

1. Insert the Windows 95 CD-ROM Setup Boot Disk which you made earlier in the floppy disk drive and set the included Windows 95 CD-ROM in the CD-ROM drive. Then restart the computer.
2. A Setup window will be displayed. Continue the installation process following the messages displayed on the screen.
3. When [Choose Directory] window is displayed, select [C:\WINDOWS] then click [Next].
4. When [Setup Options] window is displayed, select [Typical] and click [Next].
5. When [Certificate of Authenticity] window is displayed, enter the number printed on the front of the included Windows 95 book, then click [Next].
6. When [User Information] window is displayed, enter your name and your company's name then click [Next].
7. When [Analyzing Your Computer] window is displayed, click the check box to the left of [Sound, MIDI, or Video Capture Card] to check it then click [Next].

Reinstalling Software

8. When [Windows Components] window is displayed, click the circle to the left of [Show me the list of components so I can choose] to check it then click [Next].
9. When [Select Components] window is displayed, select the required applications.
10. After completing this selection, click [Next].
11. When [Startup Disk] window is displayed, check the circle to the left of [Yes] to create a startup disk, or check the circle to the left of [No] then click [Next] to skip this step. You previously created a startup disk when you created the backup disks. Create another startup disk in this step if you lost your previous startup disk.
12. When [Start Copying Files] window is displayed, click [Next]. Follow the screen messages to continue with the installation process.
13. When [Finishing Setup] window is displayed, remove the floppy disk and CD-ROM and click [Finish].
14. When [Date/Time Properties] window is displayed, insert the correct time, date and time zone and click [Close].
15. If you have installed Windows Messaging, the [Inbox Setup Wizard] will run then next time you start Windows. When this happens, select [Cancel] and proceed. (Set up the Inbox later.)
16. When [Add Printer Wizard] window is displayed, if a printer is connected to the computer, click [Next] and enter the printer settings according to the screen display. If a printer is not connected to the computer, click [Cancel].
17. When [Setup has finished configuring your system.] is displayed, click [OK].
18. Windows 95 will restart. When [Welcome to Windows 95] window is displayed, click [Close].

4 Final Windows 95 settings

● Setting power supply properties

1. Double-click the [Power] in [Control Panel].
2. Click [Power].
3. Make sure that the boxes to the left of [Allow windows to manage power use on this computer] and [Show battery meter on the taskbar] are checked.
4. Click [Disk Drives].
5. If the boxes to the left of [When powered by AC power] and [When powered by batteries] are checked, uncheck them and click [OK].

NOTE

Do not enter settings here for disk drive power management. To enter these settings, select [Start], then [Panasonic], then run [Power Management].

● Preparations for installing various drivers

1. Insert Utility Disk 3 which you created earlier in the floppy disk drive.
2. Click [Start], then click [Run].
3. Type "A:\RESTWIN" under [Open], then click [OK].
4. When [Finished-Restwin] is displayed in the title bar of the DOS window, click the [x]-mark in the upper right corner of the DOS window to close it.
5. Remove Utility Disk 3 from the floppy disk drive.
6. Click [Start], then click [Shut Down].
7. Select [Restart the computer] and click [YES].

5 Enter settings to enable PC Card use

1. Double-click [System] in [Control Panel].
2. Click [Device Manager] under [System Properties].
3. Delete the two [PCI CardBus Bridge] located under [Other devices].
4. Click [Close], then exit [System Properties].
5. Click [Start], then click [Shut Down].
6. Select [Restart the computer] and click [YES].
7. Click [OK] when a message is displayed prompting you to insert the Windows 95 CD-ROM.

A message will be displayed informing you that the file cannot be found.

NOTE

The above message is displayed even if the CD-ROM is inserted because the CD-ROM is not recognized during the PC Card setup process.

8. Change [D:\WIN95] to [C:\CABS] and click [OK].
9. When Windows 95 opens, insert Utility Disk 3 which you created earlier in the floppy disk drive.
10. Click [Start], then click [Run].
11. Type "A:\PCIC" under [Open], then click [OK].
12. When [Finished-PCIC] is displayed in the title bar of the DOS window, click the [x]-mark in the upper right corner of the DOS window to close it.

Reinstalling Software

13. Remove Utility Disk 3 from the floppy disk drive.
14. Click [Start], then click [Shut Down]. Select [Restart the computer] and click [YES].
15. When Windows 95 reopens, double-click the [PC Card (PCMCIA)] in [Control Panel].
16. The [Welcome to the PC Card (PCMCIA) Wizard] window will be displayed. Select [No], then click [Next].
17. The following message will be displayed: [...select real-mode PC card driver?]. Select [No], then click [Next].
18. In the final window, click [Finish].
19. The following message will be displayed: [Would you like to shut down your computer now ?]. Click [Yes].
20. Remove the CD-ROM drive after the computer power is turned off.
21. Turn on the computer. When Windows 95 opens, insert Drivers Disk 1 which you created earlier in the floppy disk drive.
22. Click [Start], then [Run].
23. Type "A:\PCCARDUP", under [Open] then click [OK].
24. When [Windows 95 Update] window is displayed, click [Yes].
25. When [Version Conflict] window is displayed, click [Yes].
26. When [Update complete!] is displayed, click [OK].
27. Click [Start], then [Run].
28. Type "A:\CARDBUPD", under [Open] then click [OK].
29. When [Windows 95 Update] window is displayed, click [Yes].
30. When [Version Conflict] window is displayed, click [Yes].
31. When [Update complete!] is displayed, click [OK].
32. Click [Start], then [Run].
33. Type "A:\PCIUPD", under [Open] then click [OK].
34. When [Windows 95 Update] window is displayed, click [Yes].
35. When [Version Conflict] window is displayed, click [Yes].
36. When [Update complete!] is displayed, click [OK].
37. Remove Drivers Disk 1 from the floppy disk drive.
38. Click [Start]-[Shut Down], select [Restart the computer] and click [YES].

6 Install the video driver and enter screen settings

1. Insert Drivers Disk 1 which you created earlier in the floppy disk drive.
2. Double-click [Display] in [Control Panel].
3. Click [Settings] under [Display Properties], then click on [Advanced Properties].
4. Click [Adapter] under [Advanced Display Properties], then click [Change].
5. Click [Have Disk] in the [Select Device] window.
6. Verify that [A:] is set under [Copy manufacturer's files from], then click [OK].
7. Verify that [NeoMagic MagicGraph 128ZV] is displayed, then click [OK].
(The driver will now be copied.)
8. Click [Monitor] under [Advanced Display Properties] then click [Change].
9. Under [Model], select [SuperVGA 1024x768], then click [OK].
10. Click [Performance], then select [Apply the changes without restarting].
11. Click [Adapter], select [Adapter default] under [Refresh rate], click [Close], then click [OK].
12. The following message will be displayed: [These settings will take effect when your computer is restarted.]. Click [OK].
13. Enter the following settings in [Settings] window under [Display Properties].

Parameter	Setting
Color palette	High Color (16 bit)
Desktop area	800 by 600 pixels
Show settings icon on task bar	Enabled (enter a check mark)

14. After entering the settings, click [Close].
15. Remove Drivers Disk 1 from the floppy disk drive, then click [Yes] to restart.

Reinstalling Software

7 Install the YAMAHA sound card driver

1. Double-click [System] in [Control Panel]
 2. Click [Device Manager] under [System Properties]
 3. Delete four devices in the following sequence from [Sound, video and game controllers]
 - (1) Gameport joystick
 - (2) MS Windows Sound System Compatible
 - (3) MPU-401 Compatible
 - (4) Creative Labs Sound Blaster Pro
 4. If the [Restart?] message is displayed, click [Yes]
- If the message is not displayed:**
- Click [Start], then [Shut Down]. Select [Restart the computer] and then click [YES]
5. When [Update Device Driver Wizard] window is displayed, insert Drivers Disk 1 which you created earlier in the floppy disk drive, then click [Next]
 6. Check whether [YAMAHA OPL3-SAx Sound System] has been found, then click [Finish]
 7. Click [OK] when the insert disk message is displayed
 8. Type "A \" under [Copy files from], then click [OK]
 9. Insert Driver Disk 2 as instructed by the screen message
 10. After returning to the Windows screen, remove Driver Disk 2
 11. Double-click [OPL3-SAx Config] in [Control Panel] and enter the various sound settings
 12. Double-click [Power] in [Control Panel]
 13. Click [OPL3-SAx power management] and enter a setting for [Level of power consumption]. The default setting at purchase is [Intermediate level of power save]

NOTE

Set the level to [Minimum level of power save] or [Non Power Save mode] in order to output audio through the computer's speaker from PC Cards such as modem cards. With the [Maximum level of power save] setting, audio from the speaker may be output when the sound controller enters low power mode or is restored.

8 Change the hard disk controller

Under the default setting, a [Single fifo] driver is installed. Change this to a [Dual fifo] driver.

1. Double-click [System] in [Control Panel].
2. Click [Device Manager] in [System Properties].
3. Select [Standard Dual PCI IDE Controller] from [Hard disk controllers], then click [Remove]. Click [OK] after verifying the selection is correct.
4. Click [Yes] in [System Settings Change] window, then restart the computer. The new controller will be detected when Windows 95 restarts.
5. Click [No] in the first [System Settings Change] window. The new controller will be detected again.
6. Click [Yes] in the [System Settings Change] window, then restart the computer.

9 Install the Panasonic utilities

Install [Power Management] and [CF-M31 Readme].

1. Insert Utility Disk 1 which you created earlier in the driver.
2. Click [Start], then click [Run].
3. Type "A:\SETUP" under [Open], then click [OK].
4. Follow the on-screen instructions to continue installation. Follow the message instructions to insert Utility Disk 2 in the floppy disk drive.

10 Install the Internet Explorer 4.0

At the time of purchase, Internet Explorer 4.0 is installed on the computer. If you reinstall Windows 95, the old version (Internet Explorer 3.0) will replace Internet Explorer 4.0. To restore Internet Explorer 4.0, install it again using the included Internet Explorer CD-ROM. After connecting the CD-ROM drive, insert the Internet Explorer CD-ROM. The installation tool will start automatically. Follow the messages on the screen to complete the installation.

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Windows 95 Setup Procedure

This procedure explains step **5** on page 12 in more detail.

1 Enter your name and your company's name, then click [Next]

The License Agreement will be displayed.

2 After reading the agreement, select [I accept the agreement] or [I don't accept the agreement] then click [Next]

If the former is selected, the [Certificate of Authenticity] will appear. If the latter is selected, the Windows setup will be aborted.

3 Input the Product Number written on the "Certificate of Authenticity" located in the Windows 95 book that comes with this computer. After doing so, click [Next]

4 Click [Finish]

5 If the instruction to restart appears, click [OK]

6 Insert the correct time, date and time zone and click [Close]

You can also complete these settings at a later time.

7 If you want to complete the printer settings, click [Next]

Simply follow the on-screen instructions.

If not, click [Cancel]

You can also complete these settings at a later time.

Creating a Hibernation Data Area

(When the hard disk has been formatted)

A data area for storing memory data on the hard disk must be created in order to use the hibernation function.

Required disk space: Main memory capacity + 1.2 MB

This data area can be created as a File or as a Partition.

At the time of purchase, this area is created as a Partition approximately 80 MB in size. It must be created again if you have formatted the hard disk.

● Important considerations when created as a File

- You can create the hibernation data area as a File only if you are using the FAT16 file system. With the FAT32 file system*, the area cannot be created as a File. At the time of purchase, the computer is set to use the FAT16 file system.

*In Reinstallation Step 9, for advanced users (☞ page 58), if you enter Yes when the message [Do you wish to enable large disk support (Y/N) ...?] is displayed, the file system known as FAT32 will be created.

- The system may not function properly if the disk is compressed using a method other than [DriveSpace] in [Start]-[Programs]-[Accessories]-[System Tools].

● Important considerations when created as a Partition

- Not dependent on the type of file system or disk compression software being used.
- To change the size of the Partition (e.g., after adding memory), you must erase the entire contents of the hard disk and reinstall the software. Before erasing the hard disk contents, it is necessary to take steps such as backing up data.

How to Create a Data Area

CAUTION

- Run HBUTIL.EXE from the Firstaid FD. It will not run properly if you run it from the Windows 95 MS-DOS prompt.
- Restart the computer immediately after actions such as creating or deleting a data area.

1. Insert the Firstaid FD which you created earlier in the floppy disk drive and start the computer.
2. At the (A:\>) prompt, type "HBUTIL *" and press **Enter**.
In place of the asterisk, enter the options listed below. Enter a single space between the command and the options.

Option	Description
P [size]	With this option, the hibernation data area is created as a Partition. Specify the main memory capacity in megabytes for [size]. If [size] is omitted, the partition will be created based on the current installed memory size. If [size] is set to zero, the hibernation Partition can be deleted. (Example) HBUTIL P 48 A partition will be created for executing hibernation when the main memory consists of 48 MB or less (when standard memory and 32 MB RAM module are installed).
F	With this option, the hibernation data area is created as a File (C:\HIBER.DAT) according to the current installed memory. Hibernation will not work if this file is deleted.
D	With this option, the hibernation data area created as a File is deleted.
I	With this option, information regarding the hibernation data area is displayed.

3. After this process is completed, press **Alt** + **Ctrl** + **Del** to restart the computer.

Creating a Hibernation Data Area

● Error Messages

Message on Screen	Causes and Steps to Take
Partition management information still not written to disk.	<p>There is no partition management information. The partition management information must be initialized with the FDISK command.</p> <p>First run the FDISK/MBR command, then run the FDISK command again to delete the existing primary MS-DOS partition. Restart the computer, then run the HBUTIL command again.</p>
Empty partition with sufficient space not found.	<p>An empty area with sufficient space is needed to create a hibernation data area as a Partition. Take steps such as deleting currently filled areas to free up space.</p>
A hibernation file cannot be created in this file system.	<p>The file system is not initialized, or is not FAT16. To execute hibernation with FAT32, etc., a hibernation data area must be created as a partition.</p>
Insufficient free space on drive C.	<p>Get rid of unneeded files on the specified drive to free up space.</p>

Setup Utility

Running the Setup Utility


To run the Setup Utility, you need to restart your computer.

Upon seeing this message

Press F1 for Setup

press **F1**





NOTE

- The Setup Utility will not be run if **F1** is not pressed soon after the computer restarts. In this case, you need to restart your computer again.
- If  or "Type your password, then press Enter." is displayed, enter your password.

<Main Screen>

Setup Utility	
•System Setup	
•Advanced Setup	
•Video Setup	
•Security Setup	
•Power Management	
Save Settings	
Restore Settings	
Load Default Settings	
Exit Setup	

Program Completion

- Hibernation settings ( page 16)
 - Power Management settings ( page 24)
 - Security Settings ( page 34)
 - Add-ons/Peripherals Settings ( page 38)
- After you have completed all settings, you may exit the Setup Utility.

Return to the state existing at the time of Setup Utility startup, or to the settings saved with [Save Settings].

Set default settings.

 next page

NOTE

Key Operations

F1

:To display the corresponding "help" file.

Enter

:To make a selection.

Esc

:To display previous screen
(To exit the program at the main screen).

:To move among the items.

:To move among the values of each item.

F9

:To return to the setting before a change.

F10

:To set the default values.

Setup Utility

Closing the Program








Exit
Settings were changed. Do you want to save them?
Yes, save and exit the Setup Utility. No, exit the Setup Utility without saving. No, return to the Setup Utility.

NOTE

If the User Password has been set, the password must be entered before Windows can start.

(The display may be different if no changes to the settings are made.)

Indicators

	Caps Lock	This indicator lights green when Caps Lock is pressed. Subsequent non-shifted input is capitalized.
	NumLK (Numeric key)	This  indicator lights green when NumLK is pressed. This causes a portion of the keyboard to function as a numeric keypad.
	ScrLK (Scroll lock)	This indicator lights green when ScrLK is pressed. Scroll lock functions differently depending on the application.
	Hard disk status	This indicator lights when the hard disk drive is accessed.
	Battery pack status	<div> <div>(Not lit)</div> <div>: AC adapter not connected or charging not being performed.</div> </div> <div> <div>(Lit constantly orange)</div> <div>: Charging in progress.</div> </div> <div> <div>(Lit constantly green)</div> <div>: Charging is finished.</div> </div> <div> <div>(Lit constantly red)</div> <div>: Battery is low</div> </div> <div> <div>(Blinking red)</div> <div>: Battery pack or charging malfunction.</div> </div> <div> <div>(Blinking orange)</div> <div>: Charging on standby. (The ambient temperature is outside the allowable range.)</div> </div>
	Power status	<div> <div>(Not lit)</div> <div>: Power off</div> </div> <div> <div></div> <div>When the computer enters the suspend or hibernation mode.</div> </div> <div> <div>(Lit constantly green)</div> <div>: Power on</div> </div>

Key Combinations

- Do not press the following key combinations repeatedly in (quick) succession.
- Do not press the following key combinations while using the track ball (mouse) or other keys.
- Some keys cannot be used during system startup, or while executing the suspend or hibernation process.
- Communication errors may occur if keys are used during processes such as high speed serial communications. Do not use the keys during communications.
- Pressing a key during audio playback or recording may cause the audio to be disrupted.

LCD brightness control Fn + F2	Hold down the Fn key and press F2 to change the brightness. Each press advances the setting one step through the following sequence : Dark-Medium-Bright-Power Saving
Display change Fn + F3	By pressing this key combination, you can choose to select either an external display or the LCD, or simultaneous.
Volume control Fn + F4 , F5	Pressing this key combination adjusts the volume of the internal speaker. F4 : down F5 : up
Power Management switch Fn + F6	By pressing this key combination, you can change the power management feature of the Setup Utility.
Power off using hibernation function Fn + F7	Pressing this combination causes the screen that last appeared on the display while the computer was operating to be saved to hard disk drive, and powers off the computer. When the computer is powered on, it will start from where you stopped previously.
Speaker on/off switch Fn + F8	Pressing this key combination turns off audio from the internal speaker. Pressing it again turns audio back on.

Remaining capacity of the battery pack Fn + F9	Pressing this key combination displays the remaining battery capacity on the screen.
Standby mode for conserving power Fn + F10	Pressing this key combination cuts off power to the motor of the hard disk drive and the LCD display until operation is resumed by pressing any key.
Shutting down Fn + Power Switch	This command turns off the power without entering suspend or hibernation mode, even if the suspend function or hibernation function is enabled. Use this command after saving in-use data and exiting Windows.

Specifications

Model No.		CF-M31M
CPU		Pentium® Processor with MMX™ technology 120 MHz
EDO Memory		16 MB (80 MB Max.)
Video Memory		1.1 MB
LCD	Type	8.4" (TFT)
	Displayed Colors	65536 colors (800 X 600 dots)
Hard Disk Drive		1.6 GB (1 GB = 10 ⁹ bytes)
Input Device	Keyboard	84 keys
	Pointing Device	16mm Optical Track ball (Logitech Marble)
Ext. Floppy Disk Drive		720 KB/1.44 MB (two-mode)
Card Slots	PC Card Slots	Two Type I or Type II, or one Type III
		Allowable current (total for two slots) 3.3 V : 800 mA 5 V : 600 mA
	RAM Module Slot	144-pin, 60 ns, 3.3 V, SO-DIMM, EDO, Self refresh
Interface	<Port Replicator>	
	Parallel Port	Dsub 25-pin female
	Ext. Display Port	Mini Dsub 15-pin female
	Serial Port	Dsub 9-pin male
	Ext. Keyboard/Mouse Port	Mini DIN 6-pin female (PS/2 type)
	FDD Port	26-pin female, For External Floppy Disk Drive (CF-VFUDU01)
	Microphone Jack	Dynamic Microphone
	Headphone Jack	Miniature jack, 3.5 DIA
IrDA Port		115.2 kbps/ASK, IrDA-SIR
Sound		16 bits, 44.1 kHz PCM/FM sound (Sound Blaster PRO Compatible) Mono Speaker X 1
Software	Operating System	Microsoft® Windows® 95
	Utility Programs	Diagnostics program
Battery	Battery Pack	Lithium Ion 10.8 V, 1500 mAh
	Operating Time	Approx. 2.5 hours*
	Charging Time	Power On : Approx. 5 hours* Power Off : Approx. 2.5 hours*
	Clock Battery	Coin type lithium battery 3.0 V
AC Adapter		Input : 100-240 V AC, 50/60 Hz Output : 15.1 V DC, 2.6 A
Power Consumption		Approx. 26 W** (maximum when charging in the ON state)
Physical Dimensions (WxDxH)		225 mm X 172 mm X 36 mm (8.86" X 6.77" X 1.42")
Weight		Approx. 1.0 kg (2.2 lbs) (With the battery pack installed)
Usage Condition		Temperature : 5 °C to 35 °C (41 °F to 95 °F) Humidity : 30 % to 80 % RH (No condensation)

*Varies depending on the usage conditions.

**Approx. 1.2 W when the battery pack is fully charged (or not being charged) and the computer is OFF.

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